DOCUMENT RESUME

ED 130 818 RC 009 546

AUTHOR Bruse, R.
TITLE Processes of Stratification and Occupational Migration of Peasants and Rural Workers in the Federal Republic of Germany - A Pathanalytical Approach.
PUB DATE Aug 76
NOTE 31p.; Paper presented at the World Congress of Rural Sociology (4th, Torun, Poland, August 1976)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Academic Achievement; Agriculture; Census Figures; Comparative Analysis; Critical Path Method; *Educational Interest; Farmers; Foreign Countries; Males; *Occupational Mobility; Parental Background; Parent Influence; *Rural Population; Rural to Urban Migration; Rural Youth; Social Background; *Social Mobility; *Social Stratification
IDENTIFIERS *West Germany; *World Congress of Rural Sociology (4th)

ABSTRACT

Based upon empirical data derived from a "Mikrozensus-Zusatzbefragung 71" in the Federal Republic of Germany (456,310 people), general patterns and determinations were analyzed relative to the sectoral, occupational, and vertical social mobility of the agricultural population both inside and outside the rural sector. Employing path-analysis, the process of stratification was examined in terms of education and its dependence upon social background (male youth and their fathers' occupations were examined in terms of determination for school and/or occupational education) and the relative importance of educational attainment and social background in the process of stratification (six status categories were established and intergenerational occupational comparisons were made). Results indicated: (1) farm background was a handicap in the process of stratification in the nonfarm sector; (2) in the agricultural sector, as opposed to the non-agricultural sector, the occupational status of farmers' sons was more strongly determined by fathers' occupational status than by the youth's own educational standard; (3) occupational status of the migrant to non-agricultural sectors was more influenced by educational attainment than by social background; (4) occupational migration of farmers and rural workers normally correlated with un- or semi-skilled positions in the secondary sector. (JC)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED130818

R. Brüse *

Processes of Stratification and Occupational Migration of Peasants and Rural Workers in the Federal Republic of Germany - A Pathanalytical Approach

1. Introduction
2. Patterns of sectoral, occupational and vertical social mobility
3. Process of stratification inside and outside agriculture
   1. Methodological premises of the pathanalysis
   2. Education and its dependence on the social background
   3. The relative importance of educational attainment and social background for the process of stratification
4. Conclusion
5. Abstract
6. Appendix
   1. Tables
   2. Notes
   3. References

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

* Research Institution for Agricultural Policy and Sociology of Agriculture, Bonn

Paper prepared for the Fourth Congress of Rural Sociology in Torun Poland, 9.-13. August 1976 for the Seminar 9: "Stratification and Social Mobility of the Rural Population".

RC009546

1.. Introduction

Although up to the present moment extensive research work has been done, the problem of people's outmigration from agriculture as one of the main aspects of rural population's mobility is still of great political and theoretical importance. Firstly its political importance lies in the actual practical agricultural and regional economic policy, where the mobility of those who are occupied in agriculture is regarded an indicator [1)] of sectoral structural change. Furthermore since a long time the high rates of outmigration point at existing considerable social problems [2)] in industrialized countries.

The theoretical relevance of the migration-problem becomes clear in the concept of "Integrated Rural Development", because ideas on the development-processes which have to be expected in occupational, social and regional processes of change are of basic importance for this special concept.

Countries like the Federal Republic of Germany where even in 1971 still 10 % of those who work in non-agricultural sectors originally [3)] came from agriculture, are specially usable for analyzing retrospectively types, ways and conditions of these movements, as well as the thereby initiated individual and collective change-processes.

Thereby one aim of this study is characterized: we will try to describe the general patterns of sectoral, occupational and vertical social movements that are connected with outmigration. These movement patterns characterize the "objective perspective of outmigration and mobility" [4)] of the rural population. They point at the probability, by which those who were occupied in agriculture have migrated in post-war-times into special industrial sectors, occupational positions and into positions existing whithin the socio-economic structure of inequality.

Without doubt the most important point of interest from a political as well as from a theoretical viewpoint lies in the questions concerning social upward and downward movements in relation to outmigration from agriculture. The individual mobility processes are accompanied by structural changes that form a frame for the acquisition of position and status by means of occupation. We will show this in our study by taking the rural population of the FRG as our object of research.

We have taken into account the changes of viewpoints in sociological mobility research that have taken place in the last years. Especially after the study of Blau and Duncan [5], a concepational change has taken place that partly depended on technical innovations (A.B. Sorensen 1971 S. 9) as, for example, the application of models of regression-analysis and pathanalysis.

Social mobility is no longer regarded a qualifying indicator for the dynamic or stability [6] of social systems. We concentrate more on the analysis of the determinants of occupational success and on the distribution of occupational and social status. The consequences are as follows: the basic object of mobility research, which - as a democratic principle - is to verify the openness and permeability of the occupational structure and inequality is reached by means of analyzing the direct effects of individual achievement criteria for the acquisition of socially highly esteemed positions. Variables as for example high mobility rates, low self-recruitment, and occupational inheritance-rates are of minor importance. In democratic societies the occupational status is not acquired by the rules of strict status inheritance but by the principle of "stratification by achievement". This principle seems to be a basic assumption in every theoretical model of society in which "die Verteilung materieller, politischer und symbolischer Vorteile ebenso einer besonderen Legitimierung bedürfen wie soziale Ungleichheit im Zugang zu unterschiedlich privilegierten oder benachteiligten Positionen" (Mayer, Müller, 1974 S. 2).

Any restriction or even the renunciation of this principle of legitimation may be severely dangerous for a society (Parsons, 1970, S. 13).
Within the process of stratification we can operationalize [7] and evaluate the relative importance of influences resulting from family or origin in contrast to influences resulting from education. Then we can evaluate how valid the "principle of stratification by achievement" is for a society or for a segment of society. For the rural population it becomes clear, that a high educational standard is very important for achieving a socially highly esteemed position in the farm as well as the nonfarm sector for those who outmigrated from agriculture. The attempt to prove this is the main objective of this study.

First we want to analyse the processes of stratification of the rural population by means of empirical data of the FRG; then we want to describe the patterns of the different direction of the occupational movement inside and outside of the farm sector. Because of the heterogenous definitions in mobility research it is necessary to define the time-phases of outmigration and dimensions of the movements of people with farm background.

Fundamentally we can distinguish between an occupational career within the agricultural sector and - in case of outmigration - an occupational career in the non-agricultural sector. Outmigration can occur of two kinds: intergenerational, when an agricultural occupation is not taken over and intragenerational, when an agricultural occupation was practised for a limited time only. According to Dale E. Hathaway (1971, S. 72) intragenerational outmigration takes place either as an abrupt migration from one sector to another, or by as a successive withdrawal during which a part-time-job in agriculture is kept up at least for a certain time.

Occupational mobility is defined as a change between the categories of occupational positions. [8] Sectoral mobility is defined as the movement between different categories of economic branches or sectors. Movements between social different esteemed positions are called vertical social mobility only if a structure of inequality is postulated.

Our analysis is based on the empirical data of the"Mikrozensus-Zusatzbefragung" 1971 (MZU-1971) which dealt with problems of occupational and social change within the population of the FRG. 456 310 persons were interviewed, that are 1 % of the whole population at least 15 years old. About 80 000 of this respondents are connected with agriculture by birth or vocation. By means of this large data which is representative and internationally comparable mobility-rates of the different mobility processes that concern not only of the rural population.

2. Pattern of sectoral, occupational and vertical social mobility

According to Th. Geiger (1951, S. 9) when analysing social mobility we take into consideration structural changes and individual as well as collective movements which are dependent and independent on those structural changes. In our study we take into account three aspects that can be used to characterize the mobility patterns of the rural population. As the general change of the agricultural occupational structure conditions the individual and collective occupational movements of those who are occupied in agriculture, so the changes of the general economic and occupational structure and of the inequality structure in the nonfarm sector indicate the patterns of movement of those who outmigrated from agriculture. Our empirical findings [11] based on the MZU-1971 demonstrate the following main patterns of mobility:

- the reduction of the relative and absolute number of those who are occupied in agriculture can be attributed to the overproportional diminution of workmen belonging to the family.
- the agricultural occupational structure is characterized by a relatively small permeability and shows still a high rate of self-recruitment and occupational inheritance.

The step-by-step increase in the average farm size is reflected in the outmigration behaviour. Especially former farmworkers and aids and owners of small farms migrate intragenerationally into the non-agricultural sector and this holds true mainly for the age-group of 35-50 years. Those who migrate intragenerationally from agriculture take over more frequently positions of unskilled or semi-skilled workers in sectors with high rates of workers than those who migrate intergenerationally. So these migrants prefer economic sectors and branches of the manufacturing industry or of the secondary sector that furthermore are located, in most cases, in rural areas.

Statements on social upward and downward mobility, i.e. on vertical social movements in connection with outmigration from agriculture can be given only by means of existing models that base on criteria and forms of social inequality - both inside and outside of agriculture. In our study the occupational position is the starting-point for our construction of a model of social inequality because most criteria of social inequality like access to power, control over means, income, social reputation and living-standard are closely connected with the quality of the occupational position.

This monofactorial construction on the basis of occupational prestige seems to be preferable to multidimensional items because we can suppose that both index-constructions measure identical objects but they do it with negligible differences

of exactness [12]. Similar to numerous studies [13] we take twenty status-scores for the occupational positions thus we can construct six categories of occupational status (s. Table 1).

Without any doubts this is a rough pattern of the structure of inequality which takes into account neither regional [14] nor temporal [15] or intentional changes, and which only picks up movements over greater distance. These are only a few basic assumptions of this model. By comparing the percentage distribution into these six status categories of "father-son-generations" we are able to answer the question, whether and how far the structure of inequality within the three occupational courses have changed and to what degree the outmigration from agriculture has led to a social upward or downward mobility.

Our results were as follows (s. Table 2): While in an intergenerational comparison the structure of social inequality remained unchanged for those who still work in agriculture and for those who migrated intergenerationally, it changed for the group of intragenerational migrants in so far as with them the proportion of the lower-status-categories is much higher. Therefore we can conclude that persons who migrate intragenerationally from agriculture generally have to take, in comparison to their fathers, more disadvantageous positions in non-agricultural sectors. On the other hand we can expect that those who outmigrate from agriculture directly after they have finished their school - i.e. who outmigrate intergenerationally - get positions in non-agricultural sectors that are similar to the positions other people would get.

In the FRG the thesis of the "farmbackground as a handicap" for the non-agricultural process of stratification (Blau and Duncan, 1967, S. 286) cannot be related to the father's occupation in general but to the professional career of those

persons who migrate intragenerationally and because only these persons have to take the risk of a social downward movement. The changes of the marginal distributions in Table 1 are no direct indications to circular movements, that proceed independently of these (more) structural changes. If, for example, for the group of agricultural workers the status distribution of the generation of sons corresponds to the status distribution of the generation of fathers, we are not allowed to deduce from this, that every son takes his father's status category. So we have to analyse the rate of mobility and the relation between the structural mobility and the circular mobility and w have to analyse the dependenc of the son-generation's occupational status on the correspnding occupational status of the father-generation.

On the basis of the mobility-matrix [16] we calculated a few mobility-measures(s. Table 3) for the three groups that are to be compared to one another. According to this calculation the frequence of mobility [17] in the group of outmigrants is about two thirds higher than in the group of those who remained in agricultural professions. The indices [18] of the structural (Boudon, 1973, S. 18) and circular mobility show that in the group of agricultural workers the so-called circular of exchange mobility is dominant.

Nearly one third of the sons did not migrate into the status category of their fathers. In the group of the intragenerational outmigrants the rate of the structural mobility is - because of the social downward movement - much higher than in the group of the intergenerational outmigrants. So, the same mobility rate given for both groups, the rate of exchange mobility is relatively higher for the group of intergenerational outmigrants (50 %) than for the other group.

We will show how much the occupational status of the generation of sons depends on the occupational status of the generation of fathers by means of four different coefficients in order to discuss specific methodical implications of these coefficients

and in order to examine one rather problematic assumption of the path-analysis. At the same time we compare the different measures of correlation that need different scalings, either nominal (entropy) or ordinal (Y-coefficient) or metrical (r-coefficient). Most likely these values do not allow us to make statements concerning causality but they do give some information about the degree of correlation or difference of the movements between both generations.

The values of the average conditional uncertainty [19] or entropy (Mc Farland, 1969, S. 47) indicate the degree of uncertainty of the knowledge of the son's specific occupational status-category if the father's status is known. The coefficient of determination of the average conditional entropy can measure the dependence of the son's status from the father's status. It becomes clear (s. Table 3) that in the group of the intergenerational outmigrants the uncertainty of the son's occupational status is reduced by the knowledge of the father's status. But the father's influence on his son's occupational status is less important in the group of intragenerational outmigrants than in the two other groups. The correlation-coefficients Y by Goodman/Kruskal [20] and r by Pearson [21] indicate a consistent result, even if there are small differences in the absolute amount of the coefficients.

The correlation between the father's occupational status and his son's status is significantly higher in the group of agricultural workers than in the groups of the intergenerational and intragenerational outmigrants. The dominant pattern of vertical social mobility of the population coming from agriculture can be described as follows:

1. Due to the small rate of permeability in the agricultural structure of inequality the father's status strongly influences the son's status in agriculture.

2. The high rate of exchange mobility in the intergenerational outmigration and the social descent, that is often connected with the intragenerational outmigration, effect a decreasing influence of origin in non-agricultural careers.

3. Processes of stratification inside and outside agriculture

If the obtaining of a specific occupational status at the age of 50 is regarded to be a process that is influenced by many factors, then we should regard each period of this process to be dependent on its preceding phase.

According to Blau and Duncan (1967) we suppose that for the rural population the process of stratification takes place in different phases, in rural life as well as - in case of outmigration - in non-agricultural life. We will now examine if there are any relations between the different phases of this process.

To what degree does the familiar background influence the children's educational attainment ? Does the occupational status inside and outside agriculture depend on the social background or does it depend on educational attainment ? To what degree does the first occupational status determine the placements that follow ?

We can sum up these three questions in one question: Which direct effect has the status of the first phase on the following phases ? For problems like this path-analysis has proved to be a very good method.

3.1. Methodological premises of path-analysis

Because path-analysis [22] is not really known in the sphere of rural sociology, we will make some methodological remarks [23] on it, as far as it seems necessary for understanding the models and the interpretation of the path-coefficient P_{ij}.

The path-coefficient [24] demonstrates to what degree the variable x_i depends directly on the variable x_j without the dependence to another variables.
"The squared path coefficient measures the proportion of the variance of the dependent variable for which the determining variable is directly reponsible" (S. Wright, 1934, S. 164). But this is correct only if some methodical premises are satisfied:

1. The variables have to be arranged on an interval scale. Even if the data are "in reality" not interval but ordinal-scaled we can regard the premises to be fulfilled because a comparison between the correlation-coefficients y and r shows a great correspondence. [25]

2. The relation between the variables is always regarded as additive and linear.

3. Causal relations between the variables must be unequivocal. In our model this relation is symbolized by an arrow. The postulated noncausal correlations between exogenous variables of the system are symbolized by two-headed arrows. Feed-back effects from independent variables to dependent variables are excluded. The recursivity and the direction of the dependence are fixed by the temporal ordering of the variables.

4. Influences that are not measured in our model are taken into consideration only indirectly. It seems to be unnecessary to explain them. The residual-variable R contains all the influences that are not defined in our model and all the faults of measuring. Variables that are determined by influences from outside the model are called exogenous variables. They have to be separated from endogenous variables that are completely explained by the variables of the model and the residual-variable $R_{x_{ij}}$. This variables are also represented by arrows leading from the residual variable to the dependent variable.

5. The residual variables must not correlate either with endogenous or with exogenous variables of the model nor with one another. They must not be ascribed to identical causes. For the examination of these assumptions we have to add further intervening variables.

In judging these premises we have to start from the idea that causality [27] always is a theoretical premise that cannot be proved by empirical findings.

3.2. Education and its dependence on the social background

If the social placement of children is most remarkably influenced by their families, then the first important status-phase of persons is fixed by entering school and by the educational attainment. We will not deal with the problem whether success at school is determined by genetic [28] or by social environmental factors. But we will try to answer the question: Which influences of familiar background have an effect upon the level of education of children with farm background. Variables of a small explanationary value can be neglected in the following analysis of the relative importance of social descent and individual education in the process of stratification. By means of the partial regression-coefficient [29] we can estimate the direct influence that the exogenous and endogenous variables have on school and occupational training and on apprenticeship or a training on the job for the duration of at least two years. We see (s. Table 4), that the quality of the occupational and school training of those who later on work in the agricultural sector and for those who outmigrate from agricultural later on, depends significantly more on the father's quality of occupational and school training than on the father's status and the mother's quality of education. The finishing of an apprenticeship or of on-the-job-training is strongly determined by the father's apprenticeship and by sex-specific influences.

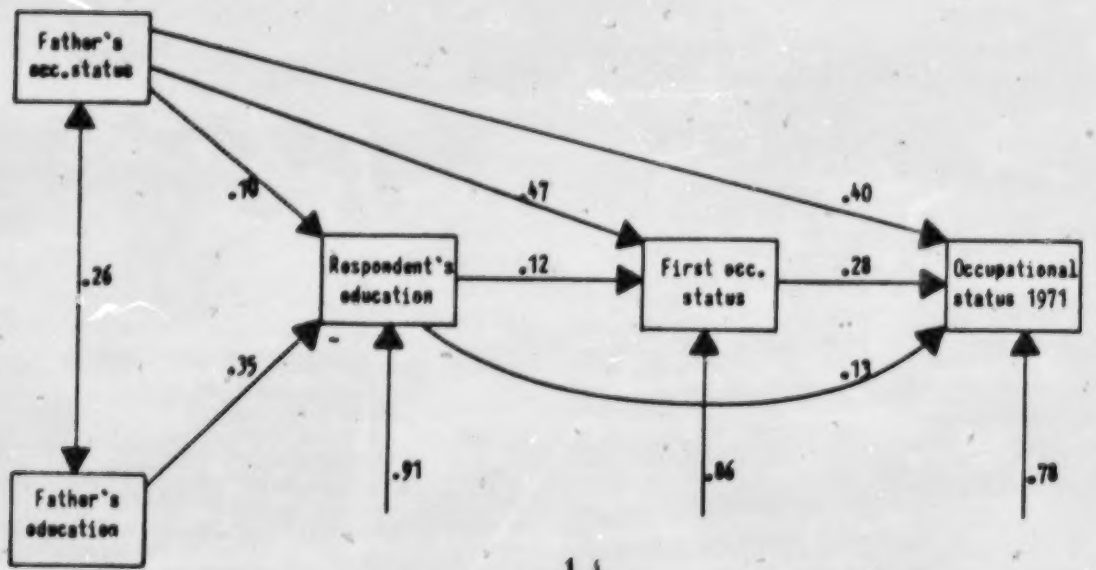
The influence of other variables like family - size, age, houseownership 1939 of the parents, place of birth in the FRG, education and apprenticeship of the mother on the quality of the school and occupational training is not worth mentioning. Because of these results we can now check the influences of social background-variables by taking chiefly into consideration the father's education and occupational status.

3.3. The relative importance of educational attainment and social background for the process of stratification

The analysis of the determinants - especially the influences of factors of social origin and education - bases on a comparison of the different careers of occupation inside and outside of agriculture. For this analysis an extended pathanalytical model of Blau and Duncan (1967 P. 170) is employed.

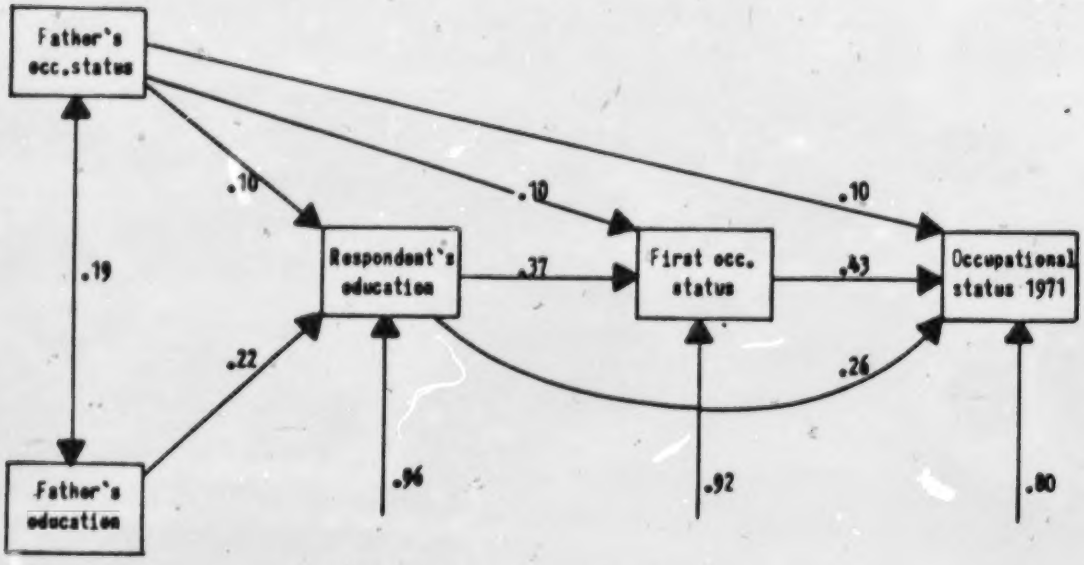
At first we are interested in the stratificationprocess of male[30] respondents, who worked in the agricultural sector in 1971. Pathdiagram 1 demonstrates this process divided into four phases.

Pathdiagram 1: Pathcoefficients in the model of the process of stratification of male peasants and farm-workers in the age of 36-45 years in the FRG; N = 835



We have already examined the dependence of the educational phase on the influence of social origin. Now we are primarily interested in the relative influence of these two phases of socialization on the first and on the last occupational status of the respondents. The path-coefficients show, that the first as well as the occupational status (1971) of the respondents depends to an extraordinarily high degree on the father's status and that the direct effects of their educational attainments are very small. Even the influence of the first occupational status upon the last measured status 1971 is of smaller importance than the occupational status of the father. This emphasizes that the principle of the son's inheriting the farm of his father is dominant in the agricultural sector.

Pathdiagram 2: Pathcoefficients in the model of the process of stratification of male intergenerational outmigrants in the age of 36-45 years in the FRG
N = 1919

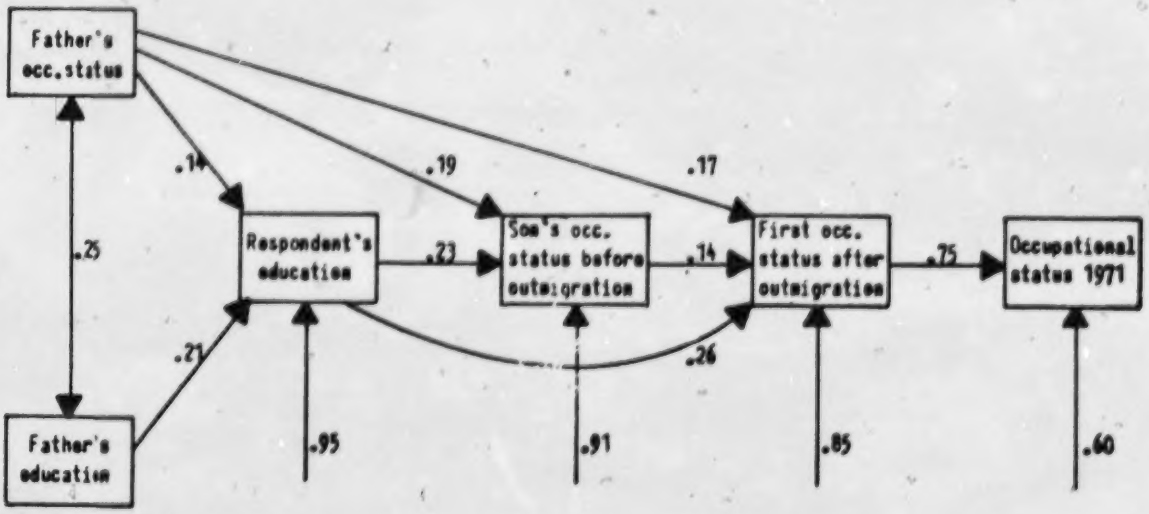


Contrary to the process of stratification in agriculture the path-coefficients in the pathdiagram 2 demonstrates the relevancy of an education level for those male persons, who outmigrated intergenerationally from agriculture. A high standard

of the occupational status and educational attainments favour the taking-over of a relatively highly esteemed occupational placement in the non-agricultural sector more than the high status of the father. While the direct effect of education upon the last occupational status is less important than the effect of the first measured occupational status, we may say that the effect of education is mainly comprised in the first status.

Contrary to the models of the process of stratification of agricultural workers and peasants as well as intergenerational outmigrants two further status-variables are added to the model of the intragenerational outmigrants. This are the last status before and the first after outmigration from agriculture.

Pathdiagram 3: Pathcoefficients in the model of the process of stratification of male intragenerational outmigrants in the age of 36-45 years in the FRG
N = 697

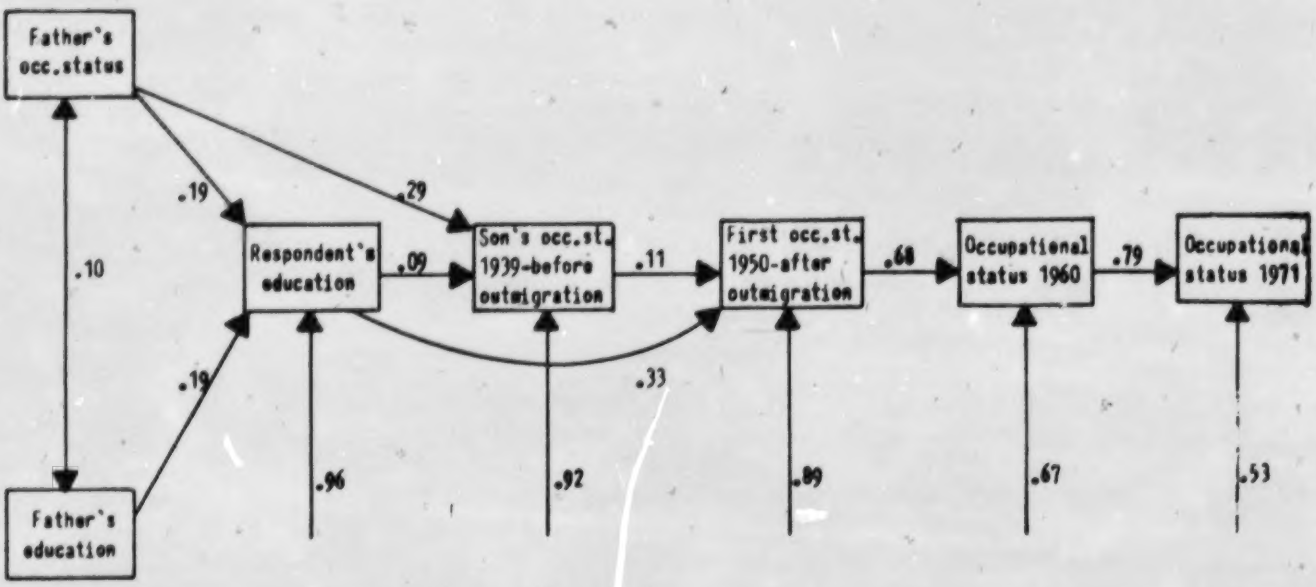


The path-coefficients of path-diagram 3 show that in case of an intragenerational outmigration the last occupational status inside agriculture is - in contrast to those who remained in agriculture - influenced more by the individual level of education than by influences of social background. Even the

eventual obtaining of a higher placement in the non-agricultural sector is influenced more strongly by educational attainment than by the status of the father or by the last status in agriculture before outmigration. So the first occupational status in the non-agricultural sector nearly absolutely determines the following positions. So potential effects of education have only indirect effects on further phases of the process of stratification.

To guarantee a sufficient comparability of the coefficients of this three models, we eliminated the important intervening influence of the factor of age (Blau and Duncan, 1967, P. 87) by constructing identical age-groups. The loss of information that is connected with such a procedure was taken into account. In general occupational careers do not come to an end by the age of 40. Therefore we examine a group of men who outmigrated intragenerationally from agriculture in the time 1939 - 1950 and who in 1971 were about 50 years old.

Pathdiagram 4: Pathcoefficients in the model of process of stratification of male between 1939 and 1950 intragenerational outmigrants in the FRG
N = 320; (average age in 1971 = 49 years)



For this group the occupational status in 1939 the last measured before outmigration corresponds to the age group of about 20 years.

and the occupational status in 1950 corresponds to the age group of about 30 years and so on. Doubtlessly the patterns of dependence in the pathdiagrams 3 and 4 are similar. The 4th model in fact shows the strong dependence of the occupational status in agriculture on the status of the father and it shows the great importance of education for the taking - over of a more highly esteemed position in the non-farm sector. Furthermore it becomes clear that the influence of social origin and the individual level of education influence directly only the first occupational stage of the career. This stage is - even for a timeperiod of 20 years and more - of major importance for all the following steps in the process of stratification. A comparison of the residual-pathcoefficients [31] of the occupational status 1971 of the four models shows, that the part of the explained variance of the model is far greater especially because of the relatively low rate of status-changes between the first and the last measured occupational status of the intragenerational outmigrants. The path-coefficients of the two variables of the social background in the first three pathdiagrams reveal that only the status of the father has a direct effect on the education of the son and on the steps of the occupational life.

So we have the following dominant patterns of dependence in the process of stratification of the rural population inside and in the case of outmigration outside of agriculture:

- Contrary to the non-agricultural sector the occupational status of the sons of farmers in agriculture is more influenced by the father's occupational status than by the educational attainment.
- In case of outmigration from agriculture the occupational status of the outmigrants in the non-agricultural sector depends more on their educational attainment than on their social background.
- The first obtained occupational status in the non-farm sector determines all the following vertical social positions and contains to a high degree the influence of earlier statussteps.

According to these results the obtaining of status in the agricultural sector results more from ascriptive elements of the strict status inheritance and less from the principle of the equality of opportunity. In case of outmigration from agriculture the social more highly esteemed occupational status-positions are achieved according to the rules of the model of "stratification by achievement". [32)]

4. Conclusion

The dominant patterns of occupational and vertical social mobility and the different importance of the social background and the educational attainments in the process of stratificatior in the diverse occupational courses of the children of farmers and farmworkers show exactly that there are different influences on the occupational career of persons with the same social background. This phenomenon seems to be peculiar for this rural population. For one part of the rural population the distribution of occupational positions takes place strictly traditionally within a semipermeable occupational structure in agriculture. The other part of the rural population, the outmigrants, have to live with a handicap of mobility, have to give up the inherited starting-advantage and have to submit to the principle of "stratification by achievement" in the non-farm sector.

These completely different perspectives of mobility for the population with farm background point at various social problems, because outmigration from agriculture was the objective occupational chance at least in the last twenty years for about two thirds[33)] of the farmers children. Apart from this results there is the question of legitimacy of the obtaining and distribution of socially highly esteemed positions within the agricultural sector.

Does the dominant, mostly direct status inheritance in the farm sector signify an optimal allocation of educational ressources or does the existing barriers against upward mobility restrict the collective ability to perform and support conservative patterns of behaviour ?

The hypothesis of the farmbackground as a handicap in the non-agricultural occupational process of stratification could be accepted only for the intragenerational outmigration. So there are some consequences for the general agricultural policy and institutional consultation. Obviously the social downward movement by intragenerational outmigration cannot only be prevented because of the temporally shortened non-agricultural occupational career and the disadvantageous starting-conditions. But also the policy of social security will not absolutely abolish these handicaps. That means, that a time-lag of outmigration will not lead to an improvement of the socio-economic situation.

Furthermore the patterns of the vertical social mobility in connection with the intragenerational outmigration reveal a large discrepancy between the objective and subjective aspects of outmigration. In many countries [34)] the subjective motivation is a result of the assumption that in the non-agricultural sector the chances for a social upward movement and for obtaining a higher salary are greater. This contradictory theory of the agricultural mobility can be solved on the following reflection: The statement of the social descent in the case of the intragenerational outmigration of the agricultural sector is only related to a comparison of the father's-son's status. A comparison of the different status stages during the occupational career reveals that only unimportant downward mobility occurs. For this reason we can conclude, that the intragenerational outmigrants do not fulfil directly a descent in the non-farm sector but they do not participate in the same way of the typical successive social improvement during an individual professional career as the other people.

Finally we want to mention a methodical problem. Doubtlessly path-analysis is an adequate method in recursive systems to analyse causal models. The assumptions concerning the relations between the metrical scales-niveaus and especially the influences of unmeasured intervening variables can never be completely fulfilled. That is why e.g. the influence of an educational system which serves as an institution for equalizing chances are in general overestimated. Therefore we should primarily interprete only the relative weight and not the absolute height of the direct dependent variables which are represented by the path-coefficient.

5. Abstract

In industrialised countries it is rewarding to analyse retrospectively the extent, the general patterns and the determinations of the sectoral, occupational and vertical social mobility of the agricultural population inside as well as outside the rural sector. The analysis bases on the empirical data of the "Mikrozensus-Zusatzbefragung 71" (including 456310 persons) in the Federal Republic of Germany and emphasizes chiefly the following thesis: (1) Farm background is a handicap in the process of stratification in the nonfarm sector. (2) In agriculture - contrary to non-agricultural sector - the occupational status of farmers' sons is stronger determined by their fathers' occupational status than by their own educational standard. (3) In the case of occupational migration to non-agricultural sectors the occupational status of the migrant outside agriculture is more determined by his educational attainment than by his social background. (4) Occupational migration of farmers and rural workers is normally correlated with taking over positions of un- or semiskilled workers in the secondary sector.

6. Appendix

1. Tables

Table 1 : Classification of occupational positions in six status-categories

Status-categories	Status-scores	Occupational-positions
1	20	Self-employees with 200 and more workers
	19	Self-employees with 50-199 workers
	18	Upper civil servants
	17	Manager
	16	Self-employees with 10-49 workers
2	15	Farmers with 100 ha and more,self-employees with 2-9 workers
	14	High civil servants
	13	Upper white collar groups
3	12	Farmer with 50-99 ha,self-employees with 0-1 workers
	11	Clerks with very difficult duties
	10	Farmers with 20-49 ha,middle white collar groups
4	9	Worker elite,simple civil servants
	8	Farmers with 10-19 ha
	7	Formen
5	6	Farmer with 5-9 ha
	5	Clerical and sales persons,low white collar groups
	4	Skilled workers
6	3	Farmers with 0-4 ha
	2	Semiskilled workers
	1	Unskilled workers

Table 2 : Intergenerational comparison of the occupational status of male employees with farm-background in the FRG, in %

Status-categories	Employees inside the farm-sector		Outmigrants outside the farm-sector in the ..... change			
	occupational status of		intragenerational occ.status of the		intergenerational occ.status of the	
	fathers	sons	fathers	sons	fathers	sons
1	0,7	2,6	0,9	1,1	0,6	2,2
2	3,4	5,5	4,6	3,6	3,0	8,2
3	28,1	17,0	15,5	9,2	13,0	13,7
4	30,7	21,7	18,8	3,4	15,8	5,9
5	20,7	22,6	29,9	17,1	30,3	41,1
6	16,4	30,6	30,3	65,6	37,3	28,9
Total %	100	100	100	100	100	100
Total N	4269	4354	4692	7167	8869	8869

Table 3 : Summary measures of mobility calculated for intergenerational mobility-matrix of the occupational status of male employees with farm-background in the FRG

Mobiliy-measures	Employees inside the farm-sector	Outmigrants outside farm-sector in the ..... change	
		intragenerat.	intergenerat.
N	4269	4692	8869
Per cent mobile	41,60	67,07	68,99
Structural mobility	4,15	33,84	18,34
Exchange mobility	37,45	33,23	50,65
Average conditional entropy	0,49	0,47	0,61
Coefficient of determination of the average conditional entropy	0,22	0,05	0,25
Correlation-coefficients			
Y (Goodman-Kruskal)	0,58	0,32	0,26
r (Pearson)	0,48	0,29	0,21

Table 4 : Partial regression coefficients in standard form (beta-coefficient) and coefficients of determination for school and occupational education of male employees with farm-background in the FRG

Independent variables	Dependent variables: Educational attainment*			Final of at least two years of apprenticeship		
	Employees ins. farm-sector	Outmigrants outside farm-sector in .....change intrag.	interg.	Employees i farm-sector	Outmigrants outs.farmsectr in.....change intrag.	interg.
Age	-.02	-.02	-.03	-.01	-.08	-.05
Number of siblings	-.04	-.04	-.04	-.05	-.03	-.06
Houseownership 1939 (respondent or paren	.05	-.02	-.03	.01	-.04	-.03
Father's education	.29	.20	.18	.10	.05	-.01
Mather's education	.10	.08	.05	.01	.02	-.02
Father's apprentices.	.05	.06	.03	.28	.20	.14
Mather's apprentices.	.00	.09	.00	.06	.10	.03
Father's occ. status	.10	.17	.11	.07	.02	.07
Place of residence 1939 inside the FRG	-.03	-.05	-.03	.03	-.01	-.04
Sex	.06	-	.14	.13	-	-.35
R^2 (coeff.of determination)	.18	.16	.10	.18	.11	.23
N	1897	2871	6145	1897	2871	6145

* The educational attainment is measured by the number of years of education.

6.2. Notes

1) See: Wissenschaftlicher Beirat beim Bundesministerium für Ernährung, Landwirtschaft und Forsten: Gutachten zur Agrarpolitik der EWG. in: Sammelband der Gutachten von 1949 bis 1974. Miltrup 1975, p. 436-437; and H. Niehaus (1957 p. 291).

2) For instance, the problems of the integration and adaption of rural way of life and the dangerous emptying of rural regions.

3) In the FRG from about 43,6 million employees in the non-farm sector have a farm background about 4,2 million people, see: R. Brüse (1975 p. 87).

4) The objective perspective of outmigration from agriculture and of the mobility of the rural population are fixed by the extent of the up to this day occured outmigration.

5) See especially the work of P.M. Blau and O.D. Duncan: The American Occupational Structure. 1967.

6) See for instance the fundamental investigations of the mobility research of P.A. Sorokin (1927) and of P. V. Glass (1954).

7) See: G. Carlsson (1958), Ch. Jencks and co-anthors (1972) and W.H. Sewell and R.W. Hauser (1972).

8) For instance: workers, self-employees, family-workers, civil-servants and clerks.

9) For instance: secondary sector, service-sector, trade and traffic.

10) See the scheme of P.A. Sorokin (1972) on p. 136.

11) In this paper we renounce to illustrate each table. The tables are contained in: R. Brüse (1975).

12) See: J.A. Kahl and J.A. Davis (1975 p. 325).

13) See: M. Janowitz (1958), R. Mayntz (1958) and K.M. Bolte (1959).

14) According to B. van Deenen (1971 p. 142) farmers with for instance 30 ha are great farmers in some regions and small farmers in another regions.

15) It can be supposed that a farmer with the same farm has changed his status group between 1930 and 1971 for instance.

16) The following analysis bases on the matrix-analysis. According to especially R. Boudon (1973 p. 7-39) we start from the following standard mobility-matrix:

		status of destination						
	Status-category	1	2	.	j	.	m	Total
Status of origin	1	n_{11}	n_{12}	.	n_{1j}	.	n_{1m}	$n_{1.}$
	2	n_{21}	n_{22}	.	n_{2j}	.	n_{2m}	$n_{2.}$
	.	.	.	.	.	.	.	.
	i	n_{i1}	n_{i2}	.	n_{ij}	.	n_{im}	$n_{i.}$
	.	.	.	.	.	.	.	.
	m	n_{m1}	n_{m2}	.	n_{mj}	.	n_{mm}	$n_{m.}$
	Total	$n_{.1}$	$n_{.2}$	.	$n_{.j}$	.	$n_{.m}$	N

17) The percentage of mobiles(P_m) is calculated by:

$$P_m = \frac{N - \sum_{i/j=1}^{m} n_{ij}}{N}$$

18) The percentage of mobile (P_m) can be divided into a part of structural and a part of exchange or pure mobility. (see R. Boudon (1973 p. 18)
"Pure mobility = total mobility - structural mobility"
"Let us define pure or exchange mobility as the part of the total mobility which is not structural".
See: R. Mukherjee and J.R. Hall (1954 p. 225-226).

19) According to D.D. Mc Farland (1969 p. 47) the "conditional entropy or uncertainty" (H) is calculated as following:
Notation: A = Status of origin
B = Status of destination

$$H\,(B/A = i) = -\sum_{j=1}^{L} P_{j/i} \log P_{j/i}$$

The average conditional entropy is calculated by the following formula:

$$H(AB) = H(A) + E\,H(A/B)$$

"where E is the expectation operator, denoting a weighted average: This formula "states that the uncertainty about the joint outcome of situations A and B equals the amount of uncertainty about the outcome of A plus average amount of uncertainty which would still remain about the outcome of B if the the outcome of A were known."
The coefficient of determination of the average conditional entropy B (B/A) has the following formula:

$$B\ (B/A) = \frac{H(B) - E\ H\ (B/A)}{H\ (B)}$$

20) The coefficient of correlation of Y (Gamma by Goodman and Kruskal (1954 p. 732-764) was calculated by the following formula:

$$Y = \frac{(S+) - (S-)}{(S+) + (S-)}$$

$$S+ = \sum_{i=1}^{n-1} \sum_{j=1}^{m-1} \left(f_{ij} \sum_{k=i+1}^{n} f_{ke} \right)$$

$$S- = \sum_{i=1}^{n-1} \sum_{j=1}^{m-1} \left(f_{n+1-i\,j} \sum_{k=1}^{n-1} \sum_{1=j-1}^{m} f_{ke} \right)$$

21) This correlation coefficient was calculated by the formula of Pearson.

22) Pathanalysis is identical with dependence-analysis

23) More methodological remarks can be found especially by W. Wright (1972), O.D. Duncan (1966), K.C. Land (1969) and D.R. Heise (1969).

24) To notify the structures of causality the following illustration is conventional:

$$X_i \xrightarrow{p_{ji}} X_j$$

25) See R.P. Boyle (1970).

26) See Note 24.

27) P. Lazarsfeld (1959 p. 146) defined causality in the following manner: "We can suggest a clear-cut definition of the causal relation between two attributes. If we have a relationship between X and Y, and if for any antecedent test factor the partial relationship between X and Y do not disappear, then the original relationship should be called a causal one".

28) See the complex social-psychological models of W.H.Sewell and R.M. Hauser (1972).

29) In the case this assumptions are fulfilled the pathcoefficients are equivalent to partial-regression-coefficients.

30) The identification of the status-scores of women in agriculture (about 50 % are family workers) is so problematical that only the male employees will be analysed.

31) The squaredresidual-pathcoefficient indicates the proportion of the unexplained variance. So we can calculate the proportion of the explained variance residually.

32) The statement does not mean that the model of "stratification by achievment" is valid of the society in FRG. s. W. Müller (1975 p. 149-168).

33) From about 6,2 millions employees with farmbackground in the FRG are employed in the farm-sector 2 millions, 2,4 are intergenerational and about 1,8 millions intragenerational Outmigrants.

34) See Th. Bergmann (1960 p. 193) and H. Kötter (1967).

6.3. References

Bergmann, Th.: Soziologische Untersuchungen zur Landarbeiterfrage. in: Zeitschrift für Agrargeschichte und Agrarsoziologie. Jg. 8. 1960, S. 193-202.

Blau, P.M. und O.D. Duncan: The American Occupational Structur. (John Wiley a. Sons, Inc) New York, London, Sydney 1967.

Bolte, K.M.: Sozialer Aufstieg und sozialer Abstieg. Stuttgart 1959.

Boudon, R.: Mathematical Structures of Social Mobility. (Elsevier) Amsterdam, London, New York 1973.

Boyle, R.P.: Path Analysis and Ordinal Data. in: American Journal of Sociology. 75, 1970. S. 461-480.

Brüse, R.: Berufliche und soziale Umschichtung der landwirtschaftlichen Bevölkerung in der Bundesrepublik Deutschland (unveröffentlichter Forschungsbericht) Bonn 1975.

Carlsson, G.: Social Mobility and Class Structure. (Gleerup) Lund 1958.

van Deenen, B.: Wandel im Verhalten, in den Einstellungen und Meinungen westdeutscher Landwirte zu Beruf, Familie und Gesellschaft. in: Schriftenreihe der Forschungsgesellschaft für Agrarpolitik und Agrarsoziologie. H. 211 Bonn 1971.

Duncan, O.D.: Path Analysis Sociological Examples. in: American Journal of Sociology. Jg. 72, 1966, S. 1-16.

Geiger, Th.: Soziale Umschichtungen in einer dänischen Mittelstadt. Kopenhagen 1951.

Glass, D.V.: Social Mobility in Britain. (Routledge a. Kegan Paul LTD) London 1954.

Goodman, L.A. and W.H. Kruskal: Measures of Association for Cross Classifications. in: Journal of the American Statistical Association. 49, 1954 S. 732-764.

Hathaway, Dale E.: Occupational Mobility from the Farm Labor Force. in: C.E. Bishop (Editor): Farm Labor in the United States. (Columbia University Press) New York and London 1967, S. 71-96.

Heise, D.R.: Problems in Path Analysis and Causal Inference. in: E.F. Borgatta (ed.): Sociological Methodology. (Jossey-Bass) San Francisco 1969, S. 38-73.

Janowitz, M.: Social Stratification and Mobility in West Germany. in: American Journal of Sociology, 64. 1958, S. 6-24.

Jencks, Ch. and M. Smith, H. Acland, M.J. Bane, D. Cohen, H. Gintis, B. Heyns, St. Michelson: Inequality - A Reassessemt of the Effect of Family and Schooling in America. (Basic Books) New York 1972.

Kahl, J.A. and J.A. Davis: A Comparison of Indexes of Socioeconomic Status. in: American Sociological Review, 20, 1955, S. 316-325.

Kötter, H.: Entwicklungstendenzen der Struktur landwirtschaftlicher Betriebe. in: Hausmitteilungen über Landwirtschaft der Kommission der Europäischen Gemeinschaft. 20, 1967.

Land, K.C.: Principles of Path Analysis. in: E.F. Borgatta (Ed.) Sociological Methodology (Jessey Bass) San Francisco 1969

Lazarsfeld, P.: The Algebra of Dichotomous Systems. in: H. Solomon (Ed.): Item Analysis and Prediction. (Stanford University Press) Stanford 1959.

Mayer, K.U. und W. Müller: Soziale Ungleichheit und Prozesse der Statuszuweisung. Referat auf dem 17. Deutschen Soziologentag, Kassel 1974.

Mayntz, R.: Soziale Schichtung und sozialer Wandel in einer Industriegemeinde. Stuttgart 1958.

Mc Farland, D.D.: Measuring the Permeability of Occupational Structures: An Information-theoretical Approach. in: American Journal of Sociology, 75, 1969, S. 41-61.

Mukherjee. R. and J.R. Hall: A Note of the Analysis of Data on Social Mobility. in: D.V. Glass (Ed.): Social Mobility in Britain. (Routledge a. Kegan Paul LTD) London 1954, S. 218-241.

Müller, W.: Familie - Schule - Beruf - Analysen zur sozialen Mobilität und Statuszuweisung in der BRD. Opladen 1975.

Niehaus, H.: Leitbilder der Wirtschafts- und Agrarpolitik in der modernen Gesellschaft. Stuttgart 1957.

Parsons, T.: Equality and Inequality in Modern Society or Social Stratification Revisited. in: E.O. Laumann: Social Stratification: Research and Theory for the 1970's. (Bobbs-Merill) Indianapolis 1970.

Sewell, W.H. and R.M. Hauser: Causes and Consequences of Higher Education: Models of the Status Attainment Process. in: American Journal of Agricultural Economics. 54, 1972, S. 851-861.

Sorensen, A.B.: Models of Social Mobility. (The Johns Hopkins University: Center for Social Organization of Schools) Report Nr. 98. 1971.

Sorokin, P.A.: Social Mobility. New York 1927.

Wissenschaftlicher Beirat beim Bundesministerium für Ernährung, Landwirtschaft und Forsten: Gutachten zur Agrarpolitik der EWG. in: Sammelband der Gutachten 1949 bis 1974. Hiltrup 1975.

Wright, S.: The Method of Path Coefficients. in: The Annals of Mathematical Statistics. 5, 1934, S. 161-215.